

costs than women, but differences in other cost items were not significant. The mean age was 51 years (SD 14 years) and 54% (SD 0.50) were men. **CONCLUSIONS:** As the societal costs for patients with schizophrenia are high and strongly related to global functioning, attempts to improve functioning by means of effective treatment and rehabilitation might not only decrease suffering for patient's and relatives, but also reduce societal cost of illness.

PMH42

#### ECONOMIC COSTS OF ABUSE AND MISUSE OF PRESCRIPTION OPIOIDS

Hansen RN<sup>1</sup>, Oster G<sup>2</sup>, Edelsberg J<sup>3</sup>, Bobo M<sup>2</sup>, Woody G<sup>3</sup>, Sullivan SD<sup>1</sup>

<sup>1</sup>University of Washington, Seattle, WA, USA, <sup>2</sup>PAI, Brookline, MA, USA, <sup>3</sup>University of Pennsylvania, Philadelphia, PA, USA

**OBJECTIVES:** While the economic costs of substance abuse have been extensively examined in the published literature, information on the costs of abuse of prescription opioids is more limited, despite this rapidly growing problem in the US. The National Survey of Drug Use and Health (NSDUH) estimated that, between 2001 and 2006, the number of persons using prescription pain relievers for nonmedical purposes increased from 3.5 million to 5.2 million. We sought to estimate the economic burden of prescription opioid abuse in the US. **METHODS:** We estimated the current economic burden of prescription opioid abuse in the US in terms of direct substance abuse treatment, medical complications, productivity loss, and criminal justice. Utilizing information from NSDUH, we distributed our broad cost estimates among the various drugs of abuse, including prescription opioids, down to the individual drug level. Data sources included the National Expenditures for Mental Health Services and Substance Abuse Treatment; the CDC's mortality database and HIV/AIDS Surveillance Report; the Office of National Drug Control Policy's estimates of the economic costs of drug abuse in the US; the US DOJ's Uniform Crime Statistics, profiles of prison and jail inmates and expenditure and employment reports; and the published literature. **RESULTS:** The estimated 2006 total cost of prescription opioid abuse was \$53.4 billion, of which \$42 billion (79%) was attributable to productivity loss, \$8.2 billion (15%) to criminal justice costs, \$2.2 billion (4%) to abuse treatment, and \$944 million to medical complications (2%). In our analysis of costs by specific prescription opioids, five drugs—OxyContin, oxycodone, hydrocodone, propoxyphene, and methadone—accounted for two thirds of all prescription-opioid-attributable costs. **CONCLUSIONS:** The great majority of the economic costs of opioid abuse, 94%, are accounted for by lost productivity and crime. The burden of prescription opioid abuse in the US is high and will likely continue to grow.

PMH43

#### DECLINE IN THE RATE AND COST OF PSYCHIATRIC HOSPITALIZATION FOLLOWING INITIATION OF DEPOT ANTIPSYCHOTICS IN THE TREATMENT OF SCHIZOPHRENIA

Peng X<sup>1</sup>, Ascher-Svanum H<sup>1</sup>, Faries D<sup>1</sup>, Conley RR<sup>2</sup>

<sup>1</sup>Eli Lilly and Company, Indianapolis, IN, USA, <sup>2</sup>Lilly USA, LLC, Indianapolis, IN, USA

**OBJECTIVES:** Antipsychotics in long-acting formulations ("depot") are often targeted for patients with schizophrenia who are at high risk of relapse and hospitalization. Little information is available on the change in the rate or cost of psychiatric hospitalization following the initiation of depot antipsychotics. This retrospective mirror-image study used a U.S. health insurance claims database to assess changes in the rate, duration, and cost of psychiatric hospitalizations following initiation of long-acting (depot) antipsychotics in patients with schizophrenia. **METHODS:** Patients younger than 65 who were diagnosed with schizophrenia on at least 2 outpatient visits or 1 inpatient hospitalization were identified from a U.S. commercial database (January 1, 2004 to March 1, 2008). Patients started on a depot antipsychotic (no depot injection in the prior 6 months) were studied in a "mirror image" design to assess change in psychiatric hospitalization rates, the mean duration and cost of hospitalization between the 6 months prior versus 6 months post medication initiation. Cost comparisons were conducted with paired t-test and bootstrapping methods. **RESULTS:** A total of 147 patients with schizophrenia were in the analysis. Compared to the six months prior to depot initiation, the rate of psychiatric hospitalization in the six months post-initiation declined from 49.7% to 22.5% ( $p < 0.001$ ); the mean hospitalized duration for psychiatric purposes numerically declined from 7.3 to 4.7 days ( $p = 0.08$ ). The change in total health care costs declined from \$11,111 to \$7,884 and was driven by the reduction in costs for psychiatric hospitalizations from \$5,384 to \$2,537 (cost offset of \$-2,847). **CONCLUSIONS:** The initiation of depot antipsychotic therapy appears to be associated with declines in hospitalization rates and hospitalization costs. Current findings suggest that treatment with depot antipsychotics is a cost-effective option for a subgroup of patients with schizophrenia who are at high risk of nonadherence with their oral antipsychotic medication regimen.

PMH44

#### IMPACT OF ALTERNATIVE DEFINITIONS OF MEDICATION COMPLIANCE ON TREATMENT COST FOR MEDICAL PATIENTS WITH SCHIZOPHRENIA

Pai J, McCombs J

USC School of Pharmacy, Los Angeles, CA, USA

**OBJECTIVES:** Investigate the relationship between persistence with antipsychotic drug therapy and treatment costs in patients with schizophrenia. **METHODS:** A retrospective database study was performed using Medi-Cal data from 1994 to 2003. Patients with schizophrenia were identified using ICD-9 codes. A total of 238,754 episodes of psychotropic drug therapy were used to estimate a series of ordinary least

squares (OLS) regression models of post-treatment cost as a function of alternative definitions of persistence. All models adjusted for baseline independent variables including demographics, drug use history, prior medical care use and co-morbid medical conditions. **RESULTS:** Our primary model compared 'gold standard' persistence patients [defined as achieving one year of continuous therapy with no augmentation or switching] to other classifications of persistent and non-persistent behavior. The least expensive patients were quitters [-\$1484] and patients who use their initial medication intermittently [-\$1791] primarily due to having lower drug costs. Patients who were persistent on their initial drug while adding a second drug and patients who achieved one year of persistence on their added drug were significantly more costly to treat than 'gold standard' patients [+\$1935 and +\$3185, respectively] [ $p < 0.0001$  for all estimates]. **CONCLUSIONS:** These results suggest that the intermittent use of psychotropic medications may be a cost-effective treatment strategy for some patients. However, low cost and intermittent use may also indicate that the patient has withdrawn from contact with the health care system. Conversely, patients who experience costly, sub-optimal outcomes may tend to add or switch drugs while maintaining uninterrupted therapy. Clearly, using persistence as a measure of drug performance in comparative effectiveness research may be misleading without data on switching and severity of illness. As a result, medications used to treat more severe patients may appear to be the most expensive medications when compared head-to-head with medications used to treat intermittent therapy patients.

PMH45

#### DAILY AVERAGE CONSUMPTION AND PHARMACY COSTS OF DULOXETINE ACROSS MULTIPLE INDICATIONS AMONG COMMERCIALLY INSURED PATIENTS

Able SL, Mitchell B, Zhao Y

Eli Lilly and Company, Indianapolis, IN, USA

**OBJECTIVES:** Health plans monitor daily dosing of pharmaceuticals by calculating daily average consumption (DACon) and average daily cost (SADC) on the basis of aggregate pharmacy data. We examined DACon and SADC for duloxetine-treated patients with 1 or more disorders for which duloxetine has received FDA approval. **METHODS:** This retrospective analysis examined US commercially insured patients who received  $\geq 1$  prescription of duloxetine during 2008 for 1 or more of the following disorders: major depressive disorder (MDD), diabetic peripheral neuropathic pain (DPNP), generalized anxiety disorder (GAD), or fibromyalgia (FM). Patients were assigned to subgroups by indication based on diagnosis codes recorded during the 12 months prior to their first recorded duloxetine prescription during the study interval. DACon was calculated by dividing total pills dispensed by total days of supply. SADCs were calculated using June 2009 new wholesale prices. **RESULTS:** There were 47,089 duloxetine-treated patients from 2008 included in the analysis, 28,313 with diagnosed MDD, 16,285 with FM, 5,769 with GAD, and 2,575 with DPNP. Overall DACon for duloxetine among all patients was 1.34 capsules per day, and SADC was \$5.44. For duloxetine-treated patients with MDD only (no GAD, DPNP, or FM), DACon and SADC were 1.42 and \$5.62, respectively. For patients with FM only, DACon/SADC were 1.28/\$5.10; for GAD only, 1.25/\$4.96; and for DPNP only, 1.25/\$4.99. DACon and SADC were higher among patients with both MDD and another indicated disorder: 1.52/\$6.06 for MDD and FM; 1.47/\$5.85 for MDD and GAD, and 1.50/\$5.98 for MDD and DPNP. **CONCLUSIONS:** DACon and SADC for duloxetine were higher for patients with MDD alone than for patients with GAD, DPNP, or FM alone. DACon and SADC were somewhat higher for patients with MDD and another indicated disorder than for MDD alone, though there was little variation in these measures with respect to which indication MDD was paired.

PMH46

#### TREATMENT PERSISTENCE WITH DULOXETINE AND HEALTH CARE COSTS IN PATIENTS WITH MAJOR DEPRESSIVE DISORDER

Liu X<sup>1</sup>, Tepper P<sup>2</sup>, Mullins CD<sup>3</sup>

<sup>1</sup>Eli Lilly and Company, Indianapolis, IN, USA, <sup>2</sup>University of Pittsburgh, Pittsburgh, PA, USA,

<sup>3</sup>University of Maryland School of Pharmacy, Baltimore, MD, USA

**OBJECTIVES:** Treatment adherence for a sufficient duration is important in the treatment of major depressive disorder (MDD). This study examined the association between treatment persistence with duloxetine and health care costs in the year after medication initiation. **METHODS:** In a large U.S. commercial managed-care claims database, 4542 patients (18 to 64 years old) with at least 1 claim with a diagnosis of MDD (ICD-9-CM: 296.2 and 296.3) were initiated on duloxetine during 2006. Patients were included if they had no active prescription of duloxetine during the 6 months prior to initiation and had continuous enrollment for 12 months prior to and post-duloxetine initiation. Treatment persistence was defined as the length of therapy without exceeding a 30-day gap. A general linear model regression was performed to examine the associations between treatment persistence and health care costs in the post 1 year. **RESULTS:** Overall, average length of duloxetine therapy was 116.0 days (SD = 63.5) in the post 6 months; 62.8% of patients stayed on the medication for more than 3 months. Significant associations between persistence and health care costs were observed. With prolonged length of therapy (<31 days, 31–90 days, >90 days), average total health care costs were significantly reduced (\$25,499, \$18,438, and \$17,255,  $p = .020$ ). Specifically, medical costs were significantly reduced (\$21,338, \$14,123, and \$11,496,  $p = 0.009$ ), while pharmacy costs were increased (\$4,161, \$4,316, and \$5,759,  $p < 0.001$ ). After adjustment for baseline demographics, comorbid conditions, and health care costs, results were essentially unchanged. Adjusted total health care costs were \$20,162, \$13,821, and \$13,706 for patients who stayed on the medication for <31 days, 31–90 days, and >90 days, respectively. **CONCLU-**